

Names involving the Madeira and Surinam Cockroaches (Dictyoptera, Blattodea, Nauphoetidae)

By D. KEITH MCE. KEVAN *

1. In the course of various studies, some of which also involve colleagues, I have recently had occasion to refer to two cosmopolitan species of cockroach, one of which (the Surinam cockroach) is naturalized in some greenhouses in the United Kingdom and elsewhere, and the other (the Madeira cockroach) widely distributed throughout the warmer parts of the world, frequently occurring as a storage pest. The latter species is not established in the United Kingdom nor in countries of similar latitude, but it is, nevertheless, quite often imported with produce from abroad. Both species are referred to and figured by Ragge (1965), the one as *Pycnoscelus surinamensis* (Linnaeus) and the other as *Leucophaea maderae* (Fabricius), by which names they are currently and generally known. There is no problem regarding the specific parts of their names, nor does the generic name of the former species now present any real difficulty, although a comment will be made later regarding it. On the other hand, the generic name *Leucophaea* proves to be a junior synonym of *Pycnoscelus* and must be replaced by *Rhyparobia*. As the species is of some economic importance, the error should be corrected as soon as possible. The story is as follows:

Blatta surinamensis was described from Surinam by Linnaeus (178: 424).¹ The genus *Pycnoscelus* was erected by Scudder (1863: 421-422), who described in it a single species, *P. obscurus* (l.c.: 422-423), on the basis of a single, immature female (not a mature male as he stated), taken "in woods under stones" at Greenfield, Massachusetts. (How it came to be in the open there — if the data are correct — is problematical.) The species was synonymized with *B. surinamensis* by Kirby (1904: 151), but he placed this in the genus *Leucophaea*, which was erected as a subgenus of *Panchlora* Burmeister, 1838, by Brunner von Wattenwyl (1865: 278), who had included *surinamensis* therein. Kirby simply did not approve of the names of taxa being based upon immature specimens.

Leucophaea, at the time of its description, included not only *surinamensis*, but also three other species, of which *maderae* (as "*P. Maderae* Fab.") was one. Kirby (l.c.) indicated *surinamensis* to be the type-species of *Leucophaea*, which had, in fact, already been done (see below), although Kirby was apparently not aware of this. Hebard (1917: 192, 193) pointed out that Kirby's preference for *Leucophaea* was invalid,

* Department of Entomology and Lyman Entomological Museum and Research Laboratory, Macdonald Campus, McGill University, Ste. Anne-de-Bellevue, Province of Quebec, Canada H9X 1C0.

¹ There is a female specimen of this species in the Linnean Collection, London. It is labelled "E.Ind/N.E.K.". It is presumably not a type, however, for the holotype is designated by Shelford (1908) from DeGeer's collection, now in the Stockholm Museum.

Pycnoscelus having precedence for the taxon including *surinamensis*, since *obscurus* was a junior synonym of this. To strengthen his argument, Hebard (*op. cit.*: 192*n*) pointed out that Rehn (1903: 282) had, in any event, already designated *Blatta maderae* (described from the island of Madeira by Fabricius (1781: 341)²) as the type-species of *Leucophaea*, thus invalidating Kirby's type selection.

Kirby (*op. cit.*: 150) had, in fact, regarded *maderae* as the type-species of *Rhyparobia* of Krauss (1892: 165). That it was such was undoubted, since *maderae* was the only species included in that genus at the time of its erection. *Rhyparobia* was therefore rendered by Hebard (1917) a junior synonym of *Leucophaea*, and this seemed to have settled the matter. The valid names for the two species were considered to be *Pycnoscelus surinamensis* (Linnaeus) and *Leucophaea maderae* (Fabricius), as noted above. Most authors have accepted this view, perhaps most importantly Princis (1964: 263; 1965: 293-294).

Nevertheless, authors from Hebard (1917) onwards, if they have considered the matter at all, seem to have overlooked the action of Caudell (1903: 331), who had indicated *surinamensis* to be the type-species of *Leucophaea* shortly before Rehn had designated *maderae* as such. Caudell's paper was published on 15th June 1930; Rehn's not until September of the same year! What is more, Caudell (1903: 311) had clearly and deliberately stated *maderae* to be the type-species of *Rhyparobia* (since this genus was monotypic when described, though he did not say so). As a result of this action, *Leucophaea* became a junior synonym of *Pycnoscelus* as soon as the latter's type-species, *obscurus*, was recognized as a subjective junior synonym of *surinamensis* (Kirby, 1904). *Rhyparobia*, the next available name for the genus that included *maderae*, and so indicated by Kirby, was thus validated and remains valid.

How Hebard (who was very careful in such matters) omitted to take Caudell's paper into consideration is difficult to imagine (unless it was out of loyalty to his great friend Rehn), for a copy would certainly have been in his hands soon after publication. (It was not in an obscure journal and the two authors regularly exchanged separata.) How Princis, in particular, as compiler of a catalogue, missed its significance is also surprising. Princis (1964: 265; 1965: 300) actually cites Caudell's paper, but he refers only to the fact that the generic name used was *Panchlora*. This was the name used in a work

²In the Banks Collection, British Museum (Natural History), London, which contains many of Fabricius' types, there are two female specimens of the species, both in fairly good condition, standing over a rectangular, black-bordered cabinet label: "Bl. Maderae/Fabr. sp. n.2" written in an ancient hand (? Banks'). Each of these specimens bears on its pin a square, black-bordered label, the one reading "Ma/dera" and the other "Bra/silia". The specimen bearing the first of these should not, apparently, be regarded as the holotype of *B. maderae*, which, according to Princis (1963: 193) is in the University Museum, Oxford.

to which Caudell was referring, not that which Caudell himself regarded as being correct. The following is a direct quotation from Caudell (1903: 331):

"Panchlora surinamnsis Linnaeus.

This belongs to and is the type of Brunner's [sub] genus *Leucophaea*.

"Panchlora maderae Olivier [sic].

This species has been removed from *Panchlora* by Dr. Krauss [(1892)], and forms the type of his genus *Rhyparobia*."

Gurney (1953), another careful worker, also discussed the nomenclature of this species, but he, too, missed the Caudell (1903) paper.

Although *Rhyparobia maderae* (Fabricius), to use its valid name, is an economically important species with an extensive literature under the generic name *Leucophaea*, the name *Rhyparobia* has often, if not as frequently, been used until comparatively recent times (see Princis, 1965: 298-304). There is this no good case for appealing to the International Commission on Zoological Nomenclature to validate *Leucophaea* in favour of *Rhyparobia* on the grounds that stability of nomenclature would be seriously threatened or confusion likely to reign if this were not done.

2. As the generic name *Pycnoscelus* has inevitably been drawn into the above discussion, it might also be worth commenting upon the spelling of this name, for it has appeared also as "*Pyconscelis*" (which seems to flow more naturally from one's pen).

Scudder (1863: 421) clearly gave the Greek derivation of of the name as puknòs, and skélos, (meaning "thick" and "leg", though he did not say so). Princis (1963: 92, 195) emended the name to *Pycnoscelis*, maintaining (*l.c.*: 195*n*) that there was no such Greek word as "*skelos*" and that it should be "*skelis*" (with the genitive *-idis*, giving the family name Pycnoscelididae³). This is, in fact, not true, even if the latter might be considered to be preferable. Furthermore, the fact that Scudder (*l.c.*) was precise (even had he been in error as Princis maintained) would preclude any emendation under the *International Code of Zoological Nomenclature*. Princis (1964: 263) again used "*Pycnoscelis*" and "*Pycnoscelididae*", but later (Princis, 1967: 709), he acknowledged his "boner" by reverting (without comment) to "*Pycnoscelus*" and "*Pycnoscelidae*".

3. With reference to family-group names that relate to the two genera discussed herein, there has been, in recent years, considerable disagreement among different authors regarding number and composition of families of cockroaches. Princis (1960, 1964, 1965), who recognizes a large number, placed *Pycnoscelus* (or *Pycnoscelis*) in his own Pycnoscelidae (Princis, 1960: 438, 444) (or Pycnoscelididae) and *Rhyparobia* (as *Leucophaea*) in the Oxyhaloidae of Finot (1897: 214), the ³Beier (1961: 797) had, without comment, already used "*Pycnoscelidini*" as a tribal name.

name of which is based upon the generic name *Oxyhaloa* Brunner von Wattenwyl, 1865. In the latter family, he also included, amongst others, the well-known genus *Nauphoeta* Burmeister, 1838; but the earliest family-group name for a taxon including this last genus, and therefore other genera in the same family group, is "Nauphoetiens" of Saussure (1864: 145, 185 — see Kevan, 1977: (11); Kevan and Vickery, 1978: 198*n*). Although this is a vernacular name, the *International Code of Zoological Nomenclature* recognizes these as being "available, so that the name takes precedence over Panchloridae of Brunner von Wattenwyl (1865: 266). The latter is the name of a taxon which also originally included *Nauphoeta* and *Rhyparobia* (as *Leucophaea*). Thus the name of the family should be Nauphoetidae (cf. Kevan, 1977: (11)). It is the opinion of many that Princis has raised too many groups of cockroaches to full family status, and I believe that all of the genera herein mentioned, *Panchlora*, *Pycnoscelus* (syn. *Leucophaea*), *Rhyparobia*, and *Nauphoeta*, should be regarded as belonging to this one family. Subfamilies may, however be recognized, *Panchlora* being assigned to the subfamily Panchloridae (family Panchloridae of Brunner von Wattenwyl, 1865, *sensu* Princis, 1960), *Pycnoscelus* to the subfamily Pycnoscelinae (Pycnoscelidae of Princis, 1960) and the others to the subfamily Nauphoetinae (Nauphoetiens of Saussure, 1864) in a restricted sense).

4. In conclusion, it might be appropriate to comment upon the spelling or the ordinal name "Dictyoptera" used in the title of this paper, although this has been explained previously (e.g., by Kevan, 1977: (9), and in Kevan and Vickery, 1978: 198*n*) and recently used elsewhere several times (e.g. by Kevan, 1978: 34).

The usual spelling or the ordinal name in recent years has been "Dictyoptera". This is, however, technically incorrect, for, although the transliteration of the Greek "ypsilon" into the Roman alphabet is acceptable using either "y" or "u" (the latter the less usual), the first use of the group name as applied to cockroaches was, in fact, as "Dictyoptera" (Leach, 1815: 60, 76, 120 — mantids were excluded on p. 119). The spelling "Dictyoptera" had been used earlier by [Schellenberg and Clairville] (1798: 44, 45)⁴ but the group there named was equivalent to the old "Neuroptera", *sensu lato*, of Linnaeus (1758) and, included no insect now generally understood by the term. "Dictyoptera", in earlier times, was used for either group, though by different authors,⁵ and at least as late as 1884 (in modified form, up to 1905) for "Neuroptera". It is therefore logical (there being no *rule* in the matter which one may follow) to return to the original spelling, "Dictyoptera" if the name is to be used for cockroaches and their relatives, and not for the groups to which "Dictyoptera" was first applied.

⁴The anonymous texts, both German and French, would now appear to have been largely, if not wholly, those of Clairville alone (Méquignon, 1940).

It should, however, be noted that the termites (long considered to constitute a separate order, Isoptera) are now regarded by various authors, including the writer, as having only subordinal status — as Termitodea — within the order that includes cockroaches (Blattodea), and mantids (Mantodea), and that these *were*, in effect, though a minority group not mentioned by name covered by the original [Schellenberg and Clairville] name Dictyoptera. Dictuoptera, on the other hand, originally included only cockroaches, although in a later usage, the author of the name, Leach (1817: 58) by definition, though without actually naming either group, extended its meaning to cover mantids also, but not termites. Thus, by severely limiting [Schellenberg and Clairville's] Dictyoptera to mean only termites — just as DeGeer's Dermaptera was long ago⁶ severely restricted by Kirby (1813) to mean only earwigs — one could argue for Dictyoptera as the name of the order including cockroaches, mantids *and* termites, but insist on Dictuoptera if the last of these is given independent ordinal status! Brullé (1831), when he dismembered the old group "Neuroptera", used the name Dictyoptères for what are now generally known as the orders Odonata, Ephemeroptera and Plecoptera, definitely excluding the termites by placing them in a separate order, "Isoptères". Dictyoptera thus effectively became a junior synonym of the oldest of the above, Odonata of Fabricius, 1792, and unavailable for *any* Dictuoptera.

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- ⁶MacLeay (1821: 367, 372) used both spellings in Leach's sense ("Dictyoptera" the first time), though he did not recognise the group (or the Dermaptera) as deserving independent status from the Orthoptera. It might also be noted that a curious misprint "Dietroptera", referring in fact to Leach's Dicuoptera, appears on pl. CCCXXXI of Brewster's *Edinburgh Encyclopaedia*, Vol. 12 [1817], the first of three plates accompanying a little-known, anonymous article on pp. 155-164 (presumably by Leach) entitled "Insects", but which, apart from the plates (which illustrate various orders), treats exclusively of Diptera.

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